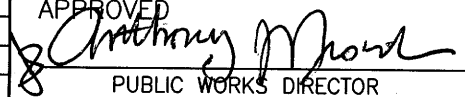


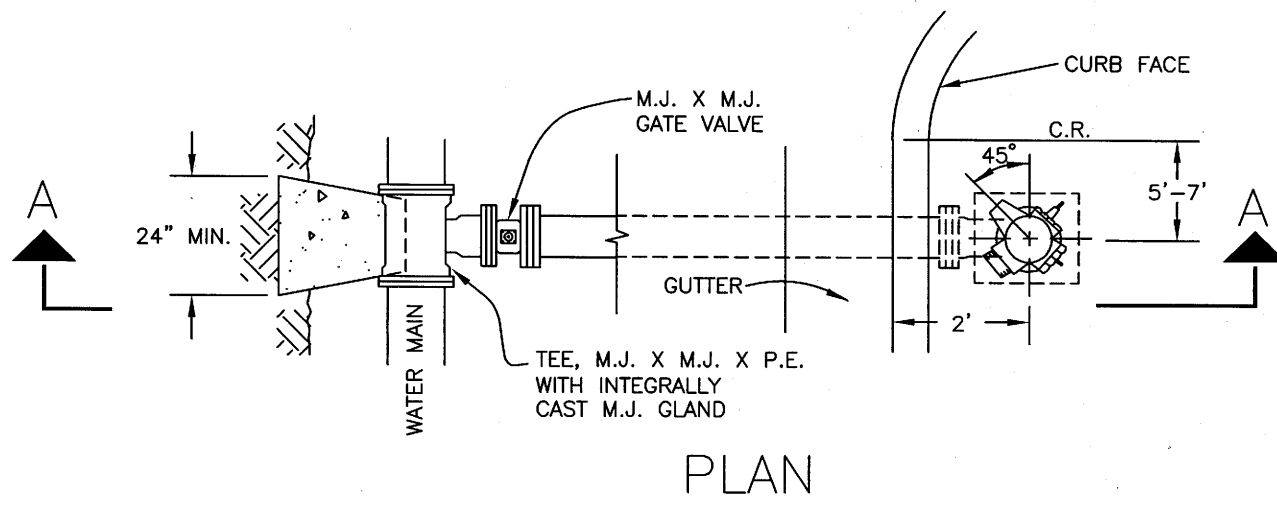
WATER

<u>NUMBER</u>	<u>TITLE</u>	<u>NUMBER</u>	<u>TITLE</u>
6-001.0	FIRE HYDRANT INSTALLATION	6-012.0	CONCRETE THRUST COLLAR
6-001.1	FIRE HYDRANT INSTALLATION - NOTES	6-013.0	CONCRETE THRUST BLOCK
6-002.0	SIDEWALK MODIFICATION AT FIRE HYDRANT	6-014.0	REDUCED PRESSURE PRINCIPAL ASSEMBLY BACKFLOW PREVENTION ASSEMBLY - TYPE 1
6-003.0	FIRE HYDRANT GUARD POST	6-014.1	REDUCED PRESSURE PRINCIPAL ASSEMBLY BACKFLOW PREVENTION ASSEMBLY - TYPE 1 - NOTES
6-004.0	VALVE BOX	6-015.0	DOUBLE DETECTOR CHECK ASSEMBLY BACKFLOW PREVENTION ASSEMBLY - TYPE 2
6-005.0	SERVICE CONNECTION	6-015.1	DOUBLE DETECTOR CHECK ASSEMBLY BACKFLOW PREVENTION ASSEMBLY - TYPE 2 - NOTES
6-005.1	SERVICE CONNECTION - NOTES	6-016.0	MODIFICATION OF SEWER LATERAL OVER WATER MAIN
6-005.2	2-INCH SERVICE CONNECTION MANIFOLD		
6-006.0	METER BOX FOR 5/8-INCH AND 1-INCH METERS		
6-008.0	METER BOX FOR 1-1/2-INCH AND 2-INCH METERS		
6-009.0	3-INCH AND LARGER METER INSTALLATION		
6-010.0	1-INCH AND 2-INCH AIR/VACUUM VALVE		
6-011.0	2-INCH BLOW OFF WITH 1-INCH SERVICE		


GENERAL LEGEND

C.I.P. = CAST IRON PIPE
 D.I.P. = DUCTILE IRON PIPE
 C.R. = CURB RETURN
 F.L.G. = FLANGE JOINT
 M.J. = MECHANICAL JOINT
 L.R.G. = LOCKING RETAINER GLAND
 P.E. = PLAIN END

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
			TABLE OF CONTENTS	6-000.0-06
		PUBLIC WORKS DIRECTOR		
		DATE		

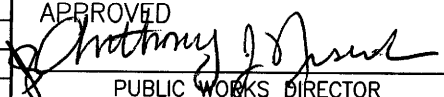


C.I.P. = CAST IRON PIPE
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REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
			FIRE HYDRANT INSTALLATION	6-001.0-06
		PUBLIC WORKS DIRECTOR		
		2/7/07		
		DATE		

NOTES:



1. Fire hydrant for residential installation shall be J. Jones No. 3700 with plastic hose cap J-669.
2. Fire hydrant for commercial installation shall be J. Jones No. J-3765 with 6 hole pattern. Use commercial installation at apartments and condominiums, motels, commercial and manufacturing developed or zoned areas.
3. Fire hydrant assembly breakaway spool shall be used to adjust lower fire hydrant stem within required distance from finish grade. Cadmium plated breakaway bolts shall be installed on fire hydrant and extension. Bolts to be installed heads up. Only one gasketed flange shall be allowed below the surface.
4. Fire hydrant, bury, control valve, tee and breakaway spool shall be lined with epoxy, Scotchkote 206N or 134. Fire hydrants shall not be epoxy lined. Before installation, Bronze fire hydrant exterior shall be washed thoroughly with XIM cleaner, and painted with one coat of white XIM primer-sealer 400 and two coats of AERO-PLATE #462 gloss bright yellow (safety yellow). Fire hydrants to be purchased with factory paint.
5. Outlets shall be positioned to 45° to curb line or center line of roadway.
6. All buried bolts shall be coated with an approved corrosion control coating and wrapped with a 10 mil. thick polyethylene sheet and taped, as specified in A.W.W.A. C-105/A21.5-82.
7. Concrete thrust blocks shall be constructed in conformance with Standard Detail 6-013.0.
8. The installation of fire hydrants in concrete sidewalk area shall be per Standard Detail 6-002.0.
9. Fire hydrant valve shall be Pratt Groundhog butterfly valve or approved resilient wedge gate valve except the butterfly valve shall not be used where the operating water pressure exceeds 200 psi. The gate valve shall be installed so that the bonnet and operating nut do not encroach into any part of the street structural section.
10. All pipe shall be ductile iron with mechanical joints and Megalug retainer glands or approved equal.
11. Fire hydrant spacing shall be according to Fire Department requirements.
12. All ductile iron pipe, including valves and fittings shall be encased with an 10 mil. thick polyethylene sheet and taped as specified in A.W.W.A. C-105/A21.5-82.
13. Any deviation from this Standard Detail shall be approved by the Water Resources Division of Public Works Department.

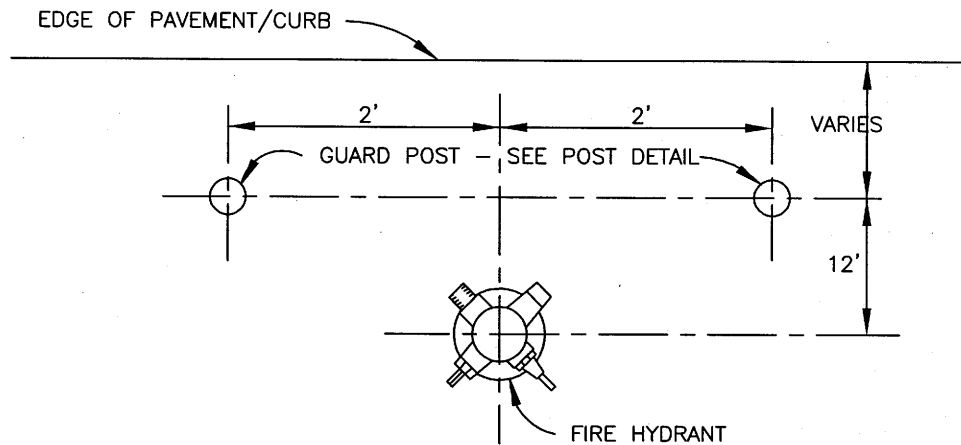
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
			FIRE HYDRANT INSTALLATION - NOTES	6-001.1-06
		PUBLIC WORKS DIRECTOR		
		2/7/87 DATE		

STREET

-
- CONC. CURB & GUTTER
- FACE OF CURB
- STD. FIRE HYDRANT
- VARIES 5' MIN.
- 4' - 6' MIN.
- VARIES
- Beginning Curve
- End Curve
- RIGHT OF WAY
- PLAN

BACK OF SIDEWALK OFFSET AT ONE-FOOT INTERVALS

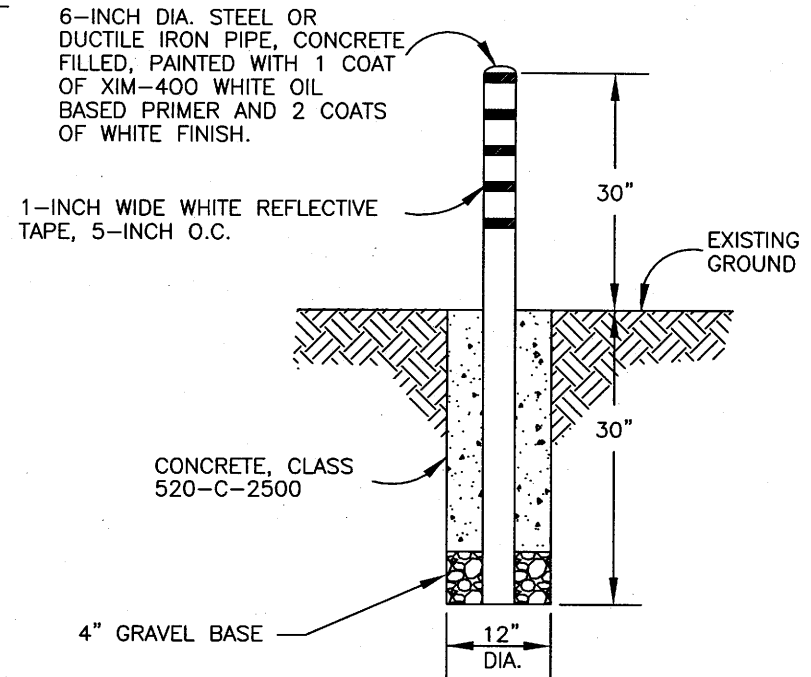
REVISED	DATE	APPROVED  PUBLIC WORKS DIRECTOR	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		 DATE	SIDEWALK MODIFICATION AT FIRE HYDRANT	6-002.0-06



PLAN

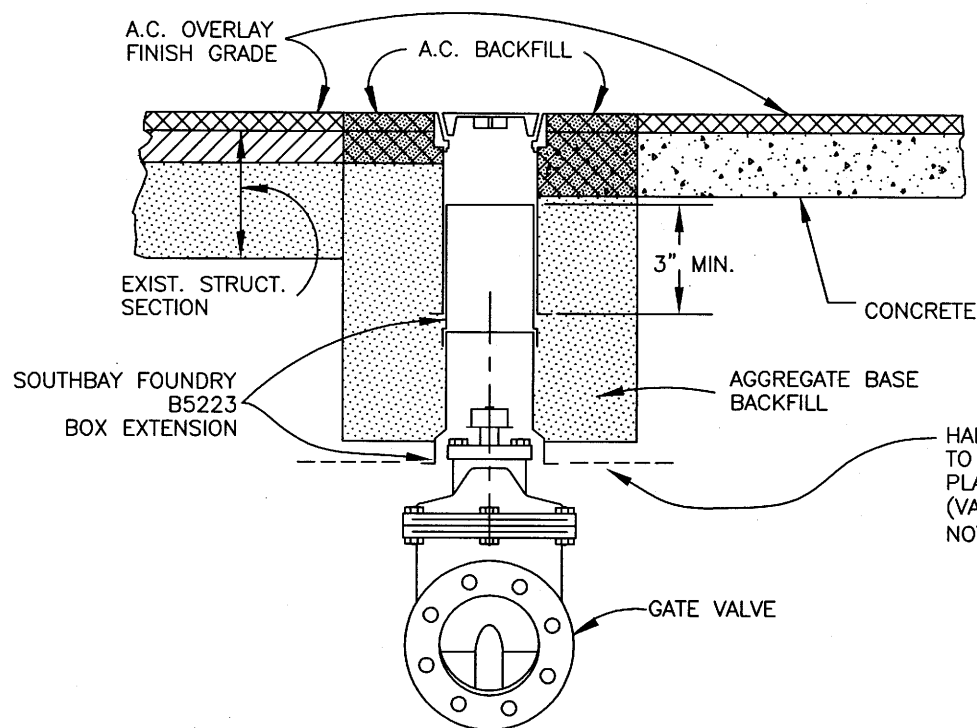
NOTES:

1. Guard posts shall be installed plumb. Concrete for setting guard posts shall be Class 520-C-2500.
2. Concrete shall be placed against firm undisturbed native soil and shall be thoroughly consolidated.
3. Any variance to the guard post layout to conform to conditions other than shown, must be approved by the Engineer.

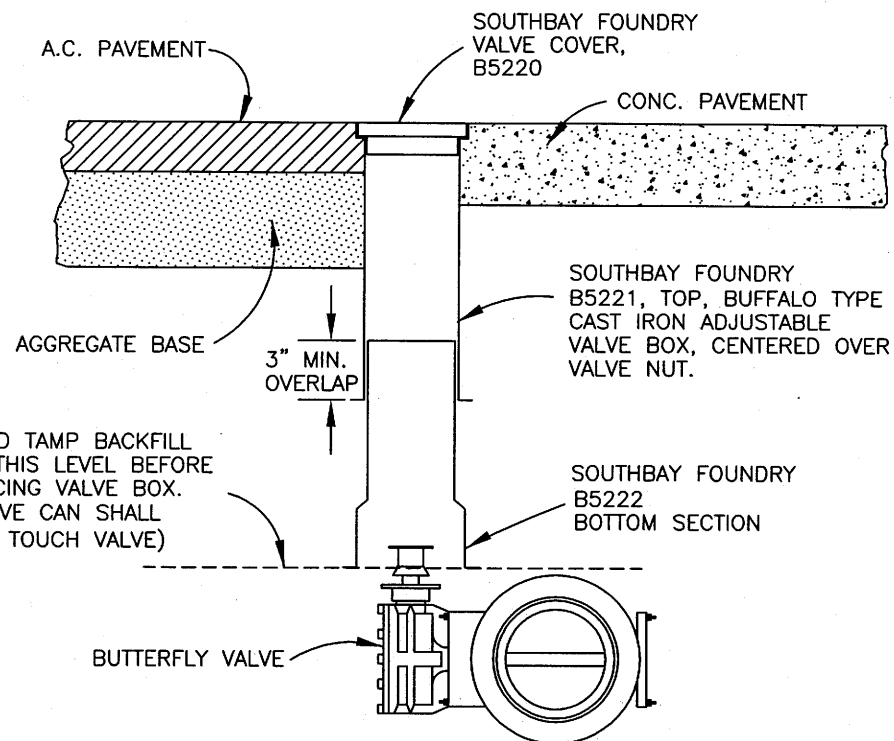


POST DETAIL

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. Dzur</i>		
		PUBLIC WORKS DIRECTOR	FIRE HYDRANT GUARD POST	6-003.0-06
		2/7/07		
		DATE		



ADJUSTMENT TO GRADE

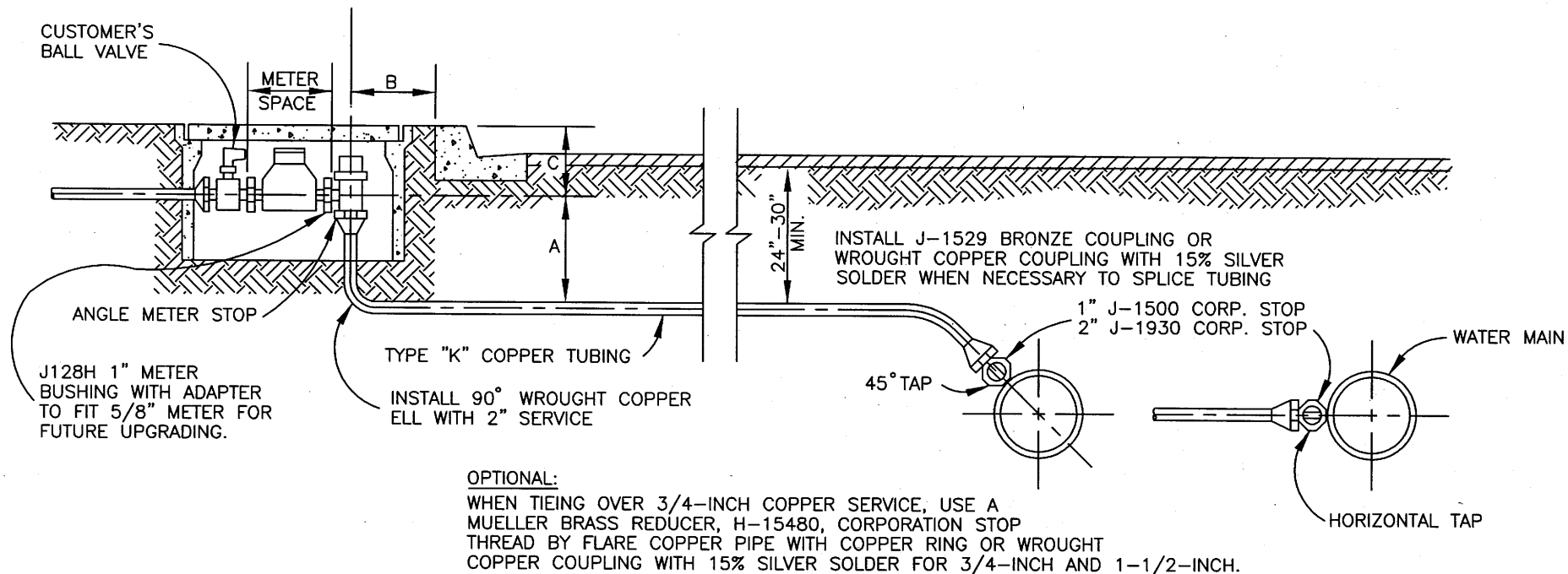


TYPICAL NEW INSTALLATION

NOTES:

1. Nut shaft extension, fitted with self-centering device and adaptor, by Pratt, or approved equal, shall be provided when cover over valve nut exceeds 2.5 feet.
2. If existing valve box is not a standard box, a box will be provided by the City and installed by the Contractor.
3. At no time shall the valve box rest directly on the valve body.

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. Dione</i>		
		PUBLIC WORKS DIRECTOR	VALVE BOX	6-004.0-06
		DATE		



MATERIAL & DIMENSIONS

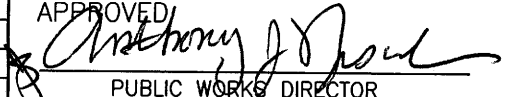
METER SIZE	ANGLE METER STOP	CORP STOP	BALL VALVE	METER SPACE	A	B	C
5/8"	J-1525W	J-1500	J-1903-W	7-3/4"	21"	8"	9"
1"	J-1525W	J-1500	J-1903-W	11-1/4"	21"	8"	9"
* 1-1/2", 2"	J-1973-FW	J-1930	J-1912-W	17-1/4"	18"	12"	12"

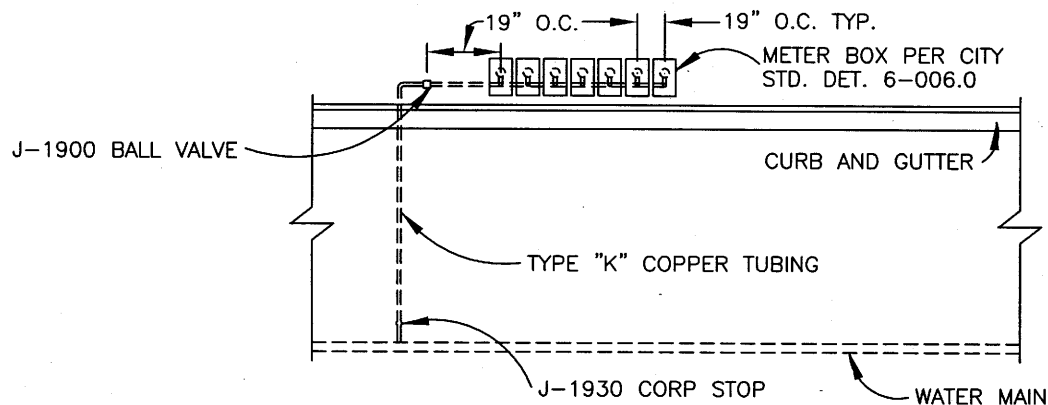
* ELONGATED HOLES TO ACCEPT 1-1/2" METER.

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. [Signature]</i>	SERVICE CONNECTION	6-005.0-06
		PUBLIC WORKS DIRECTOR		
		DATE		

NOTES:

1. Contractor shall furnish all material, except meter.
2. James Jones Co. designations are used to identify fittings.
3. Install J-969 saddle with gaskets & Corporation Stop (CC) thread when connecting services to all P.V.C. pipe oc D.I.P.
4. Tap all steel pipe through saddle, welded coupling or approved equal.
5. Minimum distance between services shall be one foot. Multiple taps shall be spaced one foot apart at 10 o'clock or 2 o'clock angle.
6. Services shall be installed perpendicular to the main unless approved by the Engineer.
7. Meter boxes shall not be permitted in driveways.
8. Contractor shall leave an appropriate "meter space" for meter installation by the City (see table on 6-005.0).
9. All new service installations and all services to be replaced shall be of 1-inch or 2-inch Type "K" copper tubing, using the material specified.

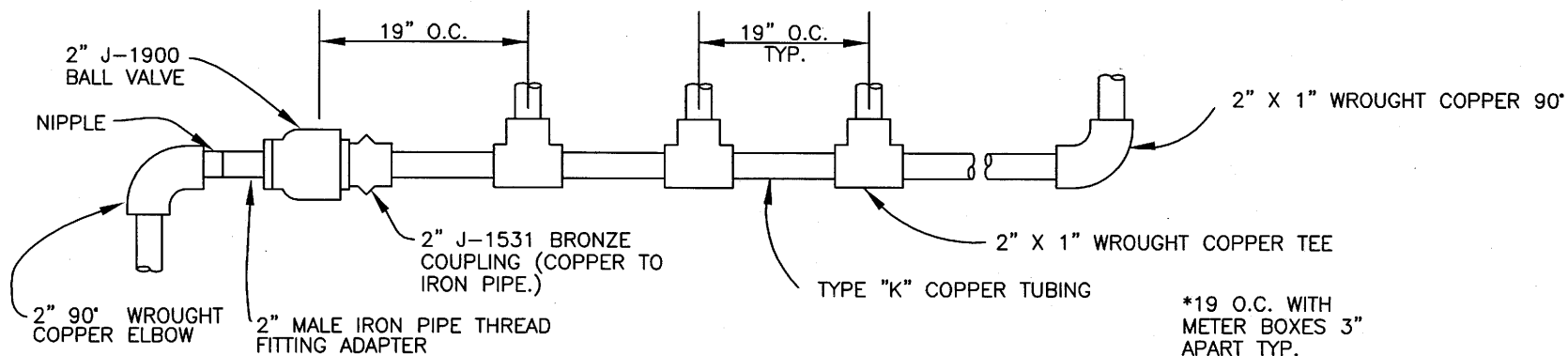
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
			SERVICE CONNECTION - NOTES	6-005.1-06
		PUBLIC WORKS DIRECTOR		
		DATE		



PLAN OF MANIFOLD ASSEMBLY

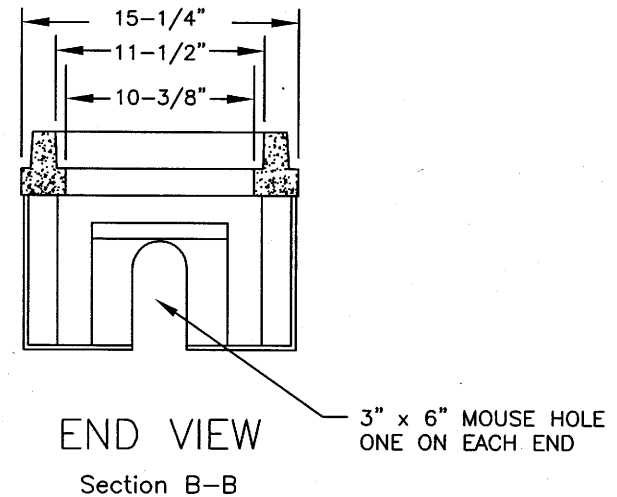
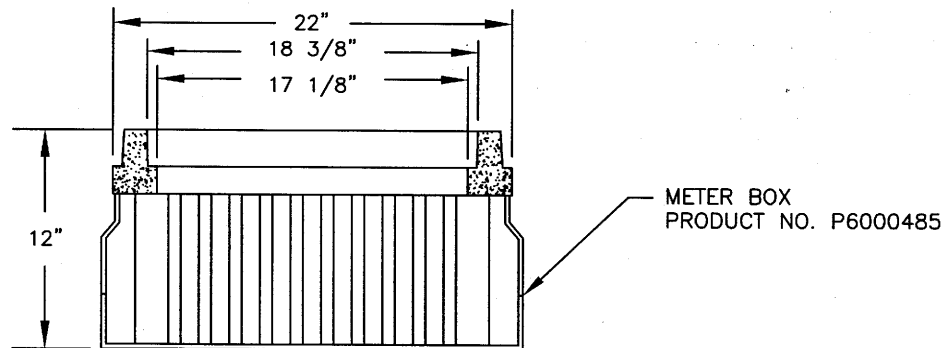
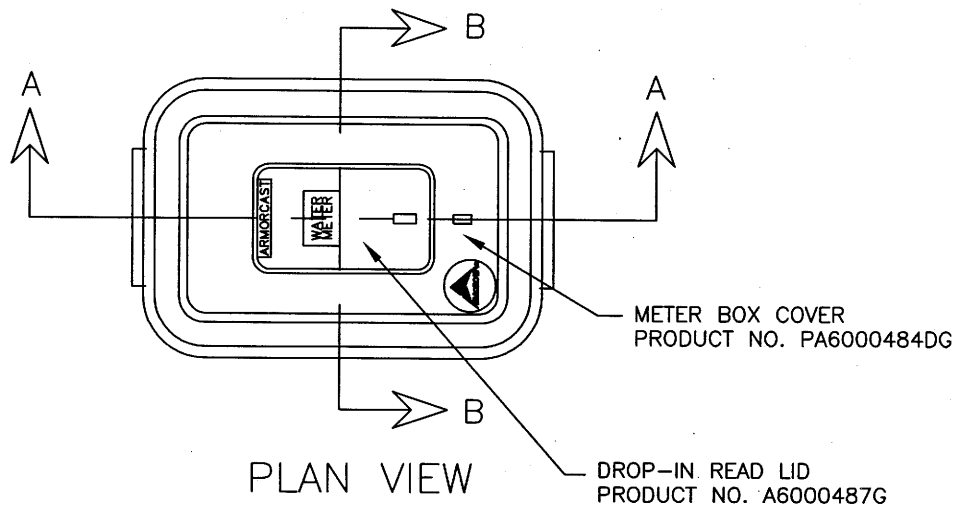
NOTES:

1. Maximum of eight (8) 5/8-inch meters per manifold. Maximum of two (2) 1-inch meters per manifold.
2. All piping to be type "K" copper tubing.
3. All brass service connection fittings to be flared type.
4. Contractors shall meet with Water Resources Distribution personnel prior to property service line installation to determine sequencing of meters. Water lines shall be plumbed in a numerical or alphabetical sequence which corresponds to the dwelling unit sequence.



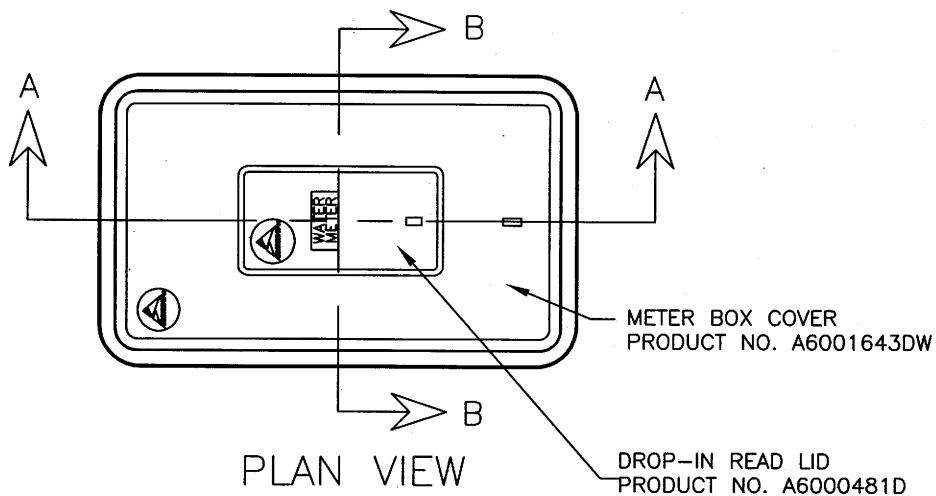
*19 O.C. WITH
METER BOXES 3"
APART TYP.

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. [Signature]</i>	2-INCH SERVICE CONNECTION MANIFOLD	6-005.2-06
		PUBLIC WORKS DIRECTOR		
		DATE		

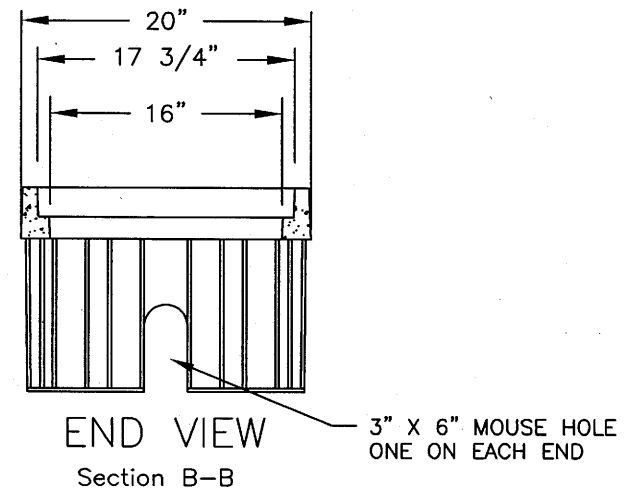
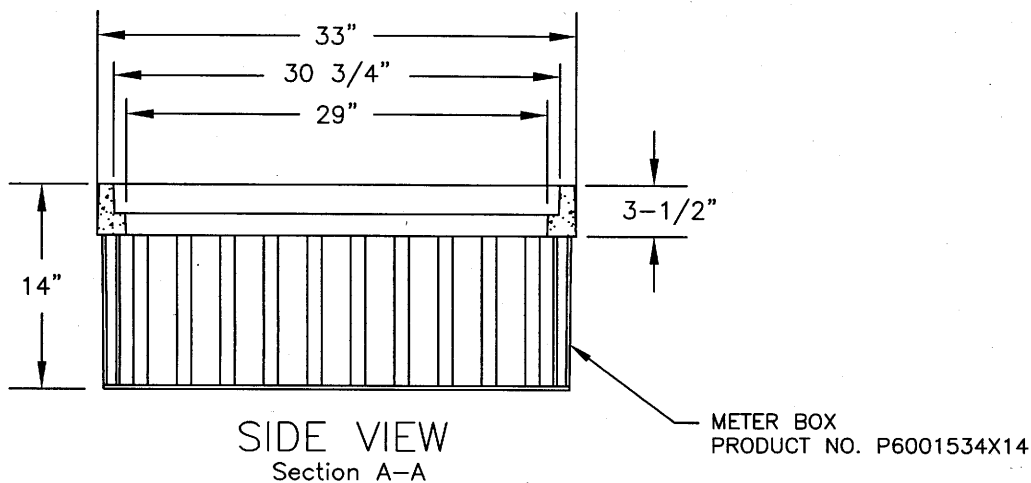


1. Meter box shall be non skid Polymer Concrete as Manufactured by:
Armorcast Products Company,
13230 Saticoy Street,
North Hollywood, CA 91605,
(818) 982- 3600

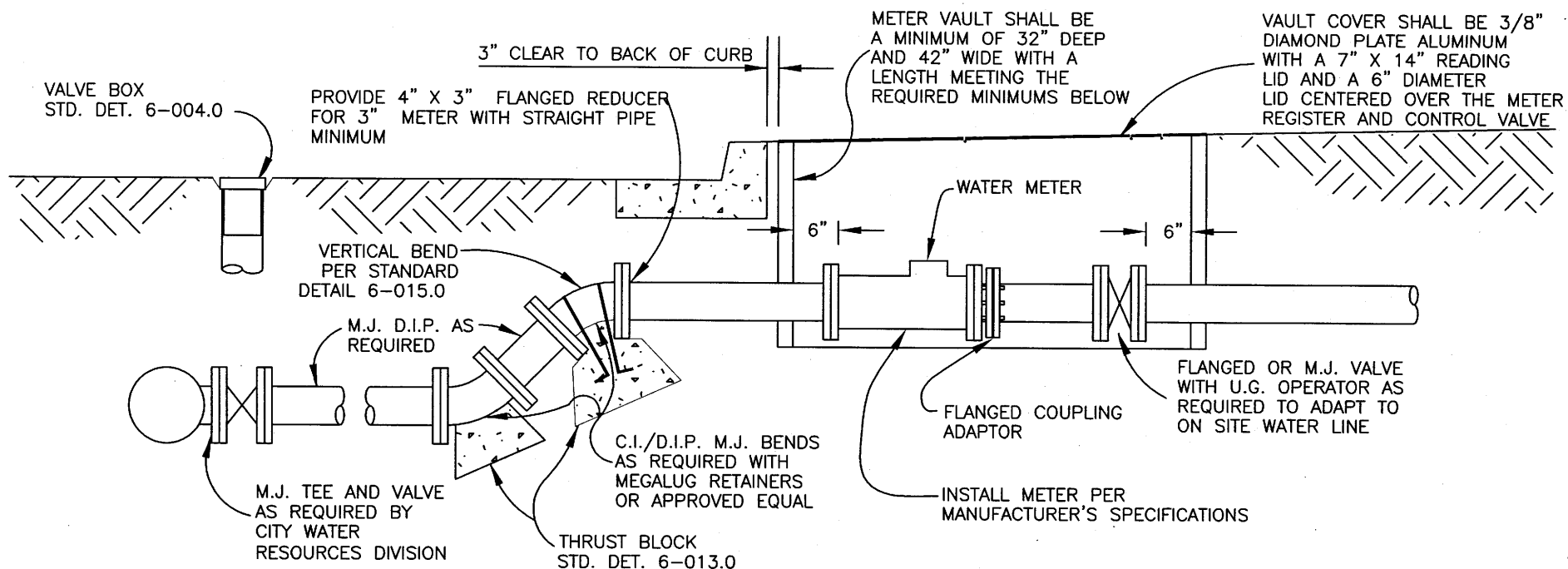
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. Israel</i>	METER BOX FOR 5/8-INCH & 1-INCH METERS	6-006.0-06
		PUBLIC WORKS DIRECTOR		
		DATE		



1. Meter box shall be non skid Polymer Concrete as Manufactured by:
Armorcast Products Company,
13230 Saticoy Street,
North Hollywood, CA 91605,
(818) 982-3600



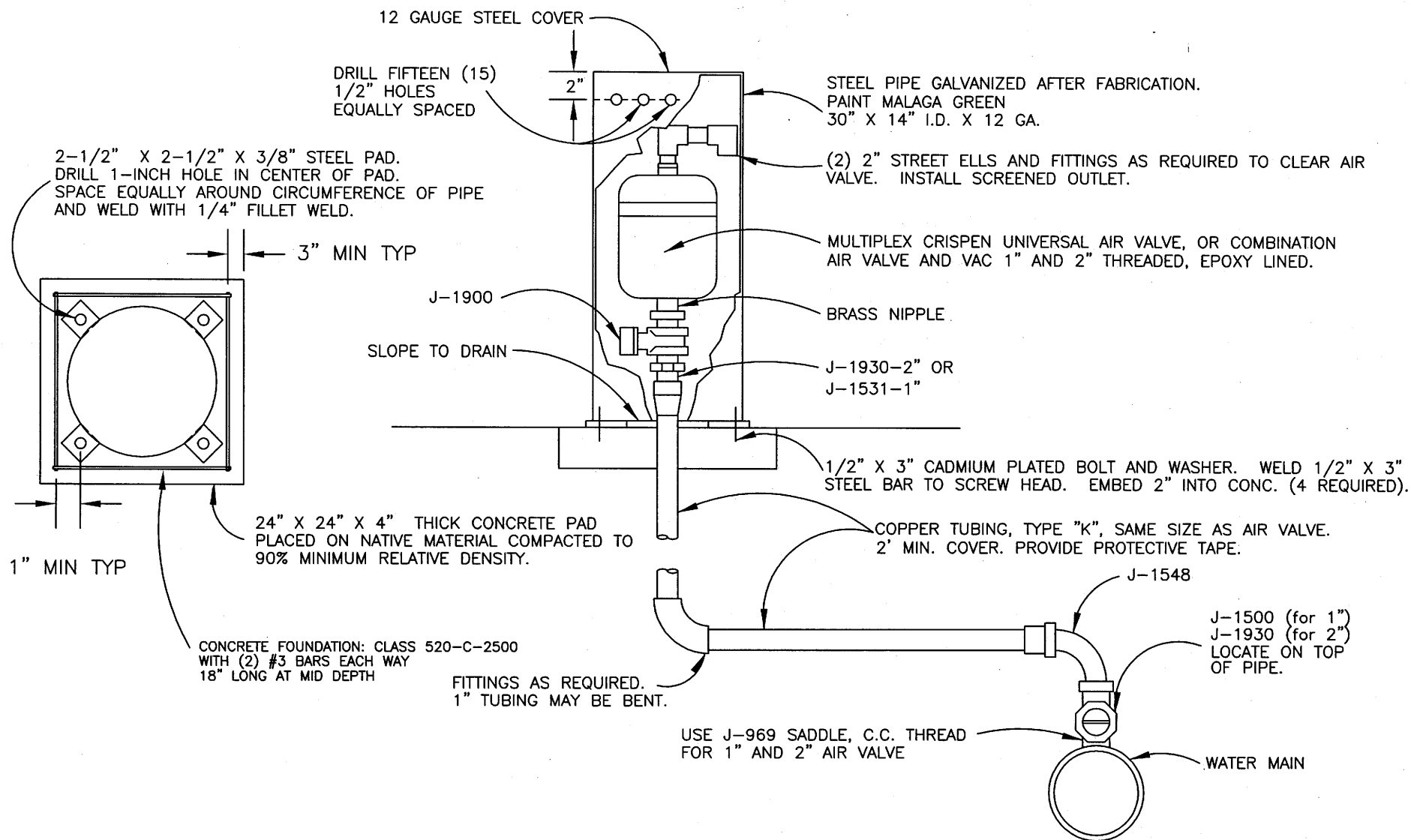
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. D. [Signature]</i>	METER BOX FOR 1 1/2-INCH & 2-INCH METERS	6-008.0-06
		PUBLIC WORKS DIRECTOR		
		DATE		



NOTES:

1. Water meter shall be Metron type shall be approved by the Water Resources Division of Public Works Department.
2. All piping shall be of the same size as the meter, except as noted for 3-inch meter installation.
3. All pipe in the street right-of-way shall be D.I.P. with mechanical joints and "MEGALUG" retainer glands or approved equal.
4. All ductile iron pipe, including valves and fittings shall be encased with a 10-mil. thick polyethylene sheet and taped as specified in A.W.W.A. C-105/A21.5-82.
5. All fittings shall be epoxy lined.

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. Dineen</i>	3-INCH AND LARGER METER INSTALLATION	6-009.0-06
		PUBLIC WORKS DIRECTOR		
		DATE		



REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. Dineen</i>	1-INCH AND 2-INCH AIR/VACUUM VALVE	6-010.0-06
		PUBLIC WORKS DIRECTOR		
		DATE		

NOTES:

1. Meter box per Std. Det. 6-008.0 without bottom.
2. Use Silver Solder for all sweat joints.

☐ OF METER INSTALLATION
SEE STD. DET. 6-005.0

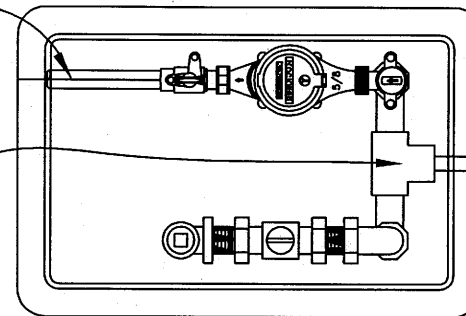
90° STREET ELBOW, FLANGE. TO COPPER AS
REQUIRED BY METER SIZE.

SERVICE CONNECTION
PER DETAIL 6-005.0

2" COPPER
TYPE "K"

J-969
SADDLE

TEE COPPER
AS REQUIRED BY
METER SIZE



PLAN VIEW

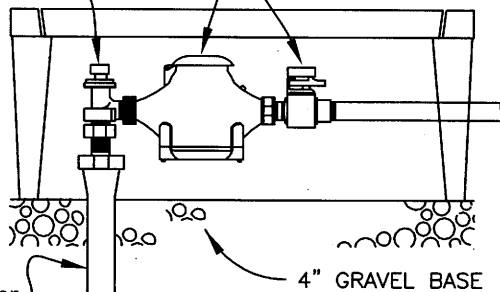
END CAP
M/J CAP

THRUST BLOCK
PER DETAIL 6-013.0

5/8" WATER METER

BALL VALVE

1" ANGLE METER STOP



2" Copper
TYPE "K"

4" GRAVEL BASE

2" WROUGHT COPPER 90°

BACK SIDE VIEW

SERVICE CONNECTION
PER DETAIL 6-005.0

2" BRASS PLUG

2" BRASS
90° ELBOW

2" CLOSE
BRASS NIPPLE

4" GRAVEL BASE

2" WROUGHT COPPER 90°

FRONT SIDE VIEW

2" J-1900

2" MALE ADAPTER

2" WROUGHT 90° ELBOW

2" COPPER
TYPE "K"

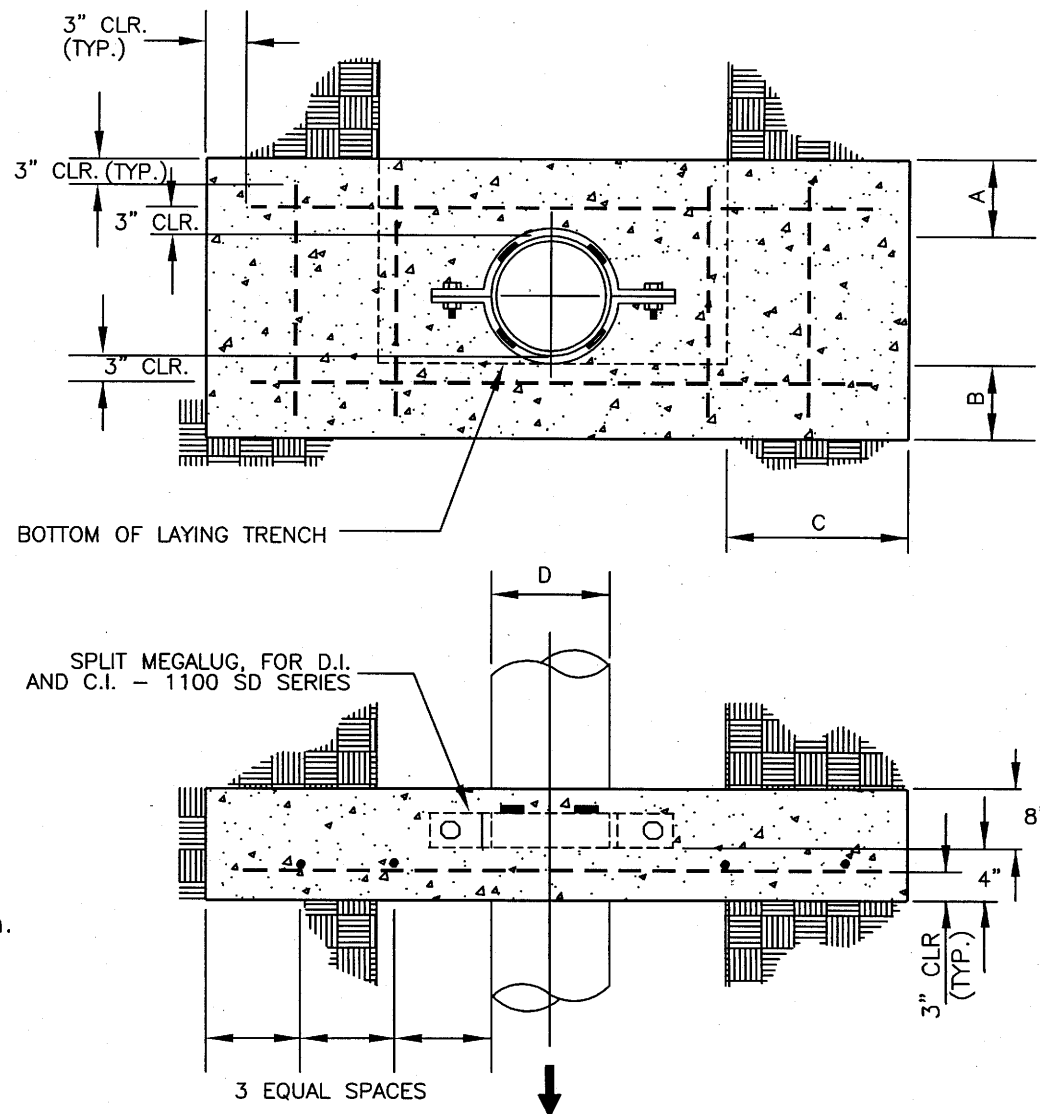
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. [Signature]</i>	2-INCH BLOW OFF WITH 1-INCH SERVICE	6-011.0-06
		PUBLIC WORKS DIRECTOR		
		DATE		

MAIN SIZE	PRESSURE (PSI)	A	B	C
8" OR LESS	0-300	6"	6"	12"
10"	0-150	6"	6"	12"
10"	150-300	6"	8"	15"
12"	0-150	6"	6"	12"
12"	150-300	6"	10"	18"

* NOTE: THRUST COLLAR NOT
TO BE INSTALLED ON P.V.C.

NOTES

1. Concrete thrust collar shall be placed solidly against firm undisturbed native soil.
2. Concrete mix shall be CLASS 520-C-2500
3. All reinforcing bars shall be No. 4.
4. Thrust collars in non-native soil shall be approved by the City Engineer before installation.



REVISED

DATE

APPROVED

PUBLIC WORKS DIRECTOR

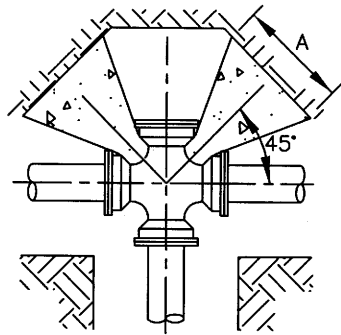
2/7/07
DATE

CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT

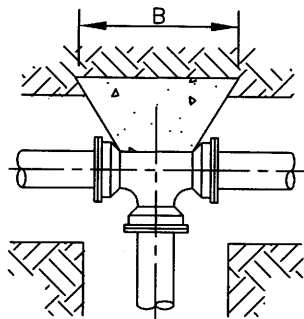
CONCRETE THRUST COLLAR

STANDARD DETAIL

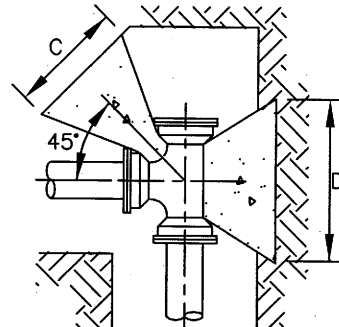
6-012.0-06



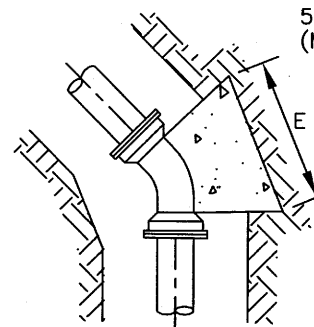
CROSS (ONE END PLUGGED)



TEE

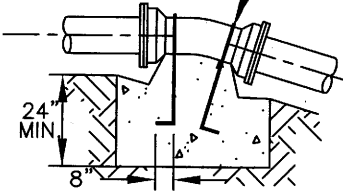


TEE (ONE END PLUGGED)



BEND

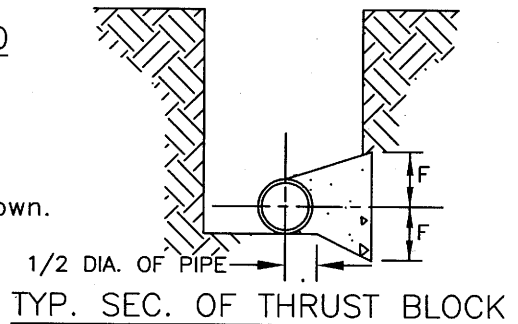
5/8" ANCHOR RODS
(MIN. 18" EMBEDMENT)



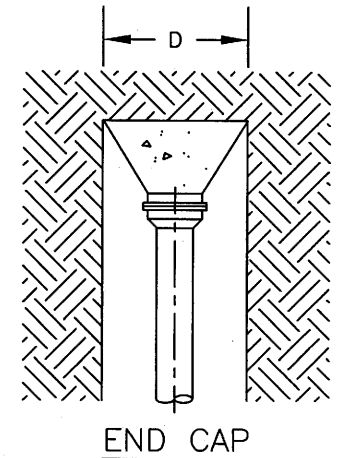
VERTICAL BEND

NOTES:

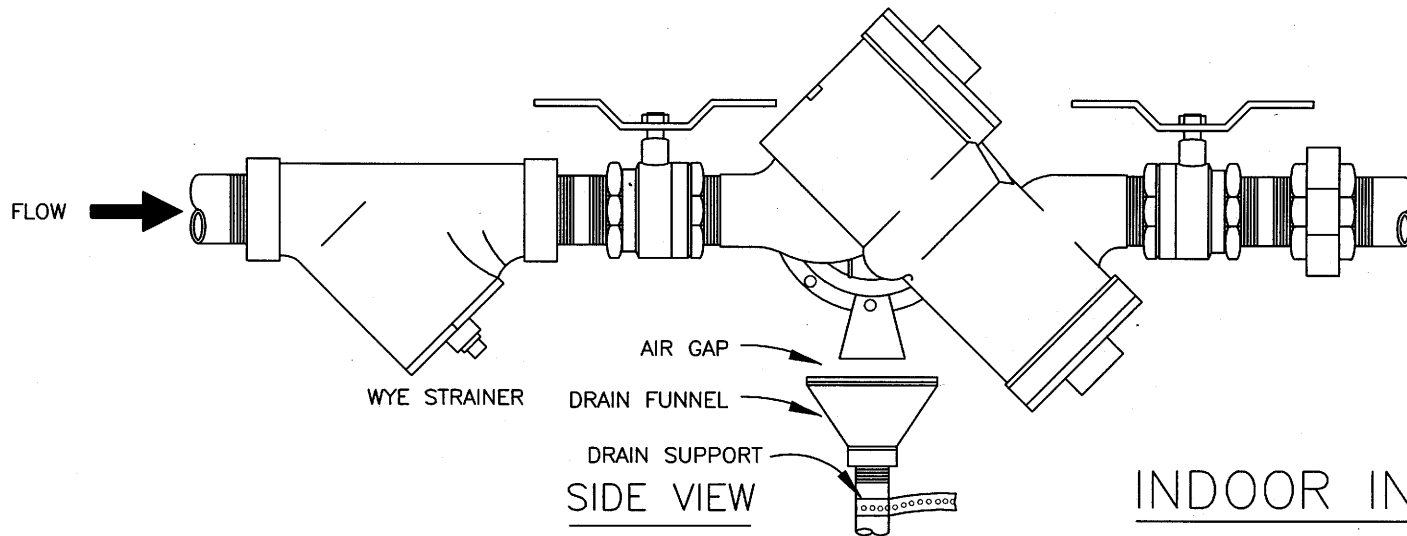
1. Concrete mix shall be Class 520-C-2500.
2. Concrete thrust blocks shall be installed to the dimensions & configurations as shown.
3. Concrete thrust blocks shall be placed solidly against firm undisturbed native soil.
4. Concrete placed against the pipe fitting shall not extend beyond the joints.
5. Dimensions shown are given in inches except as noted.



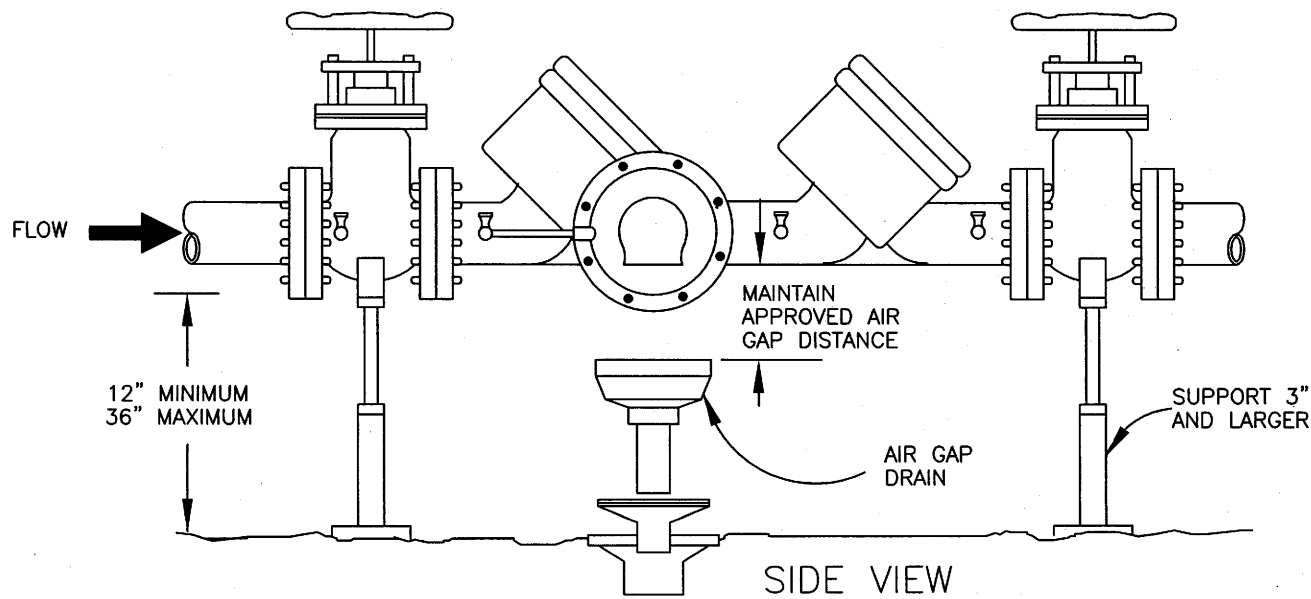
MAIN SIZE (IN.)	MAIN PRESSURE (P.S.I.)	CROSSES AND TEES (FEET)						HORIZONTAL BENDS								VERT. BENDS (REQD. C.Y.)		
								90°		45°		22-1/2°		11-1/4°				
		F	A	B	C	D		F	E	F	E	F	E	F	E	45°	22-1/2°	11-1/4°
4	0-150	5	12	12	12	18		5	12	5	12	5	12	5	12	0.4	0.2	0.2
4	150-300	6	12	12	18	24		6	18	5	12	5	12	5	12	0.8	0.4	0.2
6	0-150	6	12	18	18	30		6	18	6	12	6	12	6	12	0.9	0.5	0.3
6	150-300	9	18	18	24	36		9	24	9	18	6	12	6	12	1.8	1.0	0.5
8	0-150	9	12	18	24	36		9	24	6	18	6	12	6	12	1.5	0.8	0.4
8	150-300	12	18	24	36	48		12	36	9	24	9	18	6	12	3.0	1.6	0.8
10	0-150	12	18	18	30	36		12	30	9	24	6	18	6	12	2.3	1.2	0.6
10	150-300	15	24	30	42	60		15	42	12	30	9	24	6	18	4.6	2.4	1.2
12	0-150	12	18	30	36	54		12	36	12	24	9	18	6	12	3.3	1.7	0.8
12	150-300	18	24	36	48	72		18	48	15	36	12	24	9	18	6.6	3.4	1.7
14	150-300	21	27	42	54	84		0	0	17	42	17	30	11	21	7.9	4.0	2.0
16	150-300	24	30	48	60	96		0	0	18	48	15	36	12	24	9.2	4.6	2.3



REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. Jones</i>	CONCRETE THRUST BLOCK	6-013.0-06
		PUBLIC WORKS DIRECTOR	DATE 2/7/07	



INDOOR INSTALLATION



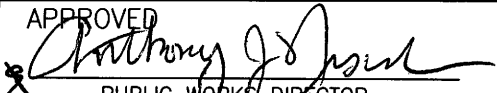

SIDE VIEW

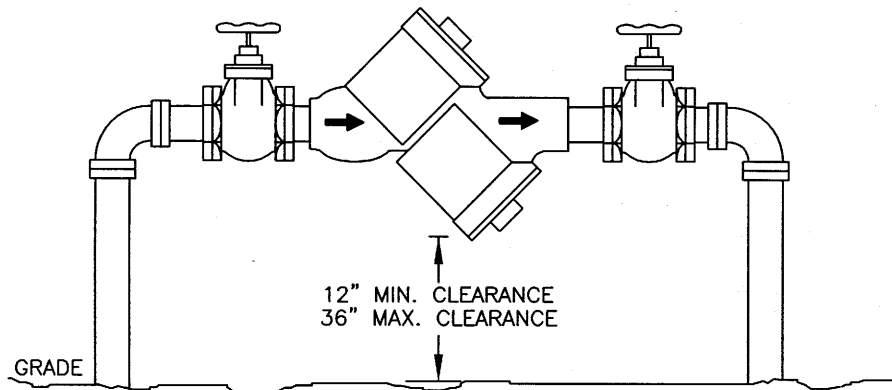
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. Jones</i>	REDUCED PRESSURE PRINCIPAL ASSEMBLY	6-014.0-06
		PUBLIC WORKS DIRECTOR	BACKFLOW PREVENTION ASSEMBLY - TYPE 1	
		DATE		

NOTES:

Proper installation of the assembly is essential to the protection of the water supply. The following are important characteristics of a proper installation.

1. The assembly shall be installed in a horizontal position with a minimum clearance of 12 inches and maximum of 36 inches between the relief valve discharge port and floor or grade, and a minimum of 18 inches of horizontal clearance around the unit for access and ease of testing and maintenance of the relief valve.
2. A Reduced Pressure Assembly shall not be installed in a pit. Flooding of the pit can result in cross connection contamination.
3. Placement of the assembly should be planned where water discharged from the relief port will not be objectionable.
4. The assembly must be purchased and installed with resilient seat valves as approved by the University of California Foundation for Cross-Connection Control and Hydraulic Research (USC). CAUTION: Open and close resilient seated shut-offs slowly to prevent water hammer damage to the system and assembly.
5. Since the reduced pressure assembly is designed to be serviced while in line, the unit need not be removed from the line during servicing. Union connections between the shut-off valves are recommended for ease of removal for damaged units 2 inch and smaller.
6. Insure the supply water pressure does not exceed the manufacturer's maximum water pressure rating of the assembly to avoid damage to the system or the assembly caused by system pressure. In addition, protection must be provided against thermal water expansion, extreme backpressure and/or water hammer.
7. Most field problems occur because dirt or debris present in the system at the time of installation becomes trapped in the first check seating area, resulting in continuous discharge from the relief valve in a static or backflow condition. THE SYSTEM SHOULD BE FLUSHED BEFORE THE ASSEMBLY IS INSTALLED.. If debris is in the water system continues to cause fouling, a strainer can be installed upstream of the assembly.

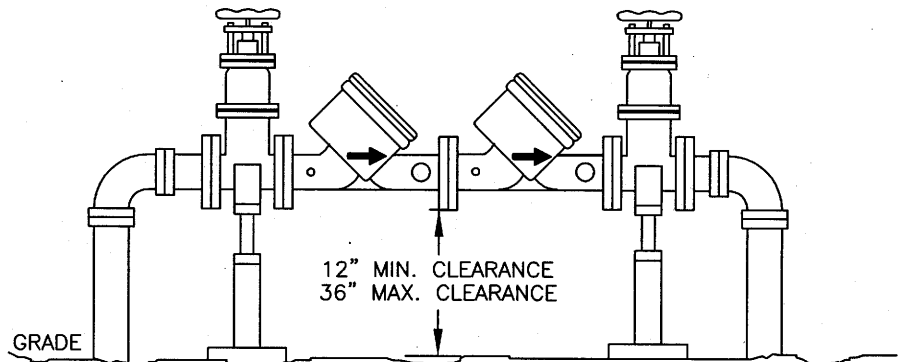
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
			REDUCED PRESSURE PRINCIPAL ASSEMBLY	6-014.1-06
		 PUBLIC WORKS DIRECTOR	BACKFLOW PREVENTION ASSEMBLY - TYPE 1 - NOTES	
		2/7/07 DATE		



OUTSIDE INSTALLATION
(SIDE VIEW)

(SIZES 3/4" THROUGH 2")

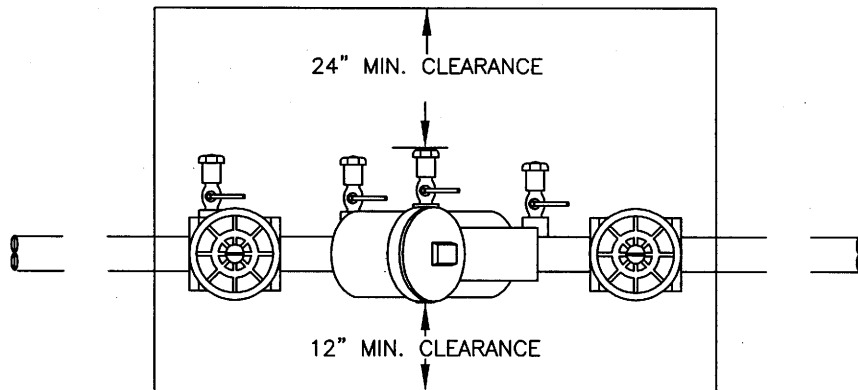
DOUBLE CHECK VALVE ASSEMBLY



OUTSIDE INSTALLATION
(SIDE VIEW)

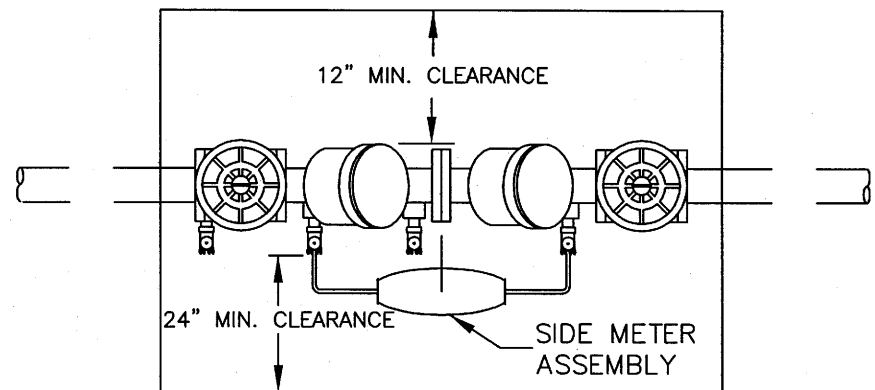
(SIZES 2-1/2" AND LARGER)

DOUBLE CHECK DETECTOR CHECK ASSEMBLY



PIT INSTALLATION
(TOP VIEW)

(SIZES 3/4" THROUGH 2")




PIT INSTALLATION
(TOP VIEW)

(SIZES 2-1/2" AND LARGER)

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. [Signature]</i>	DOUBLE DETECTOR CHECK ASSEMBLY	6-015.0-06
		PUBLIC WORKS DIRECTOR	BACKFLOW PREVENTION ASSEMBLY - TYPE 2	
		DATE		

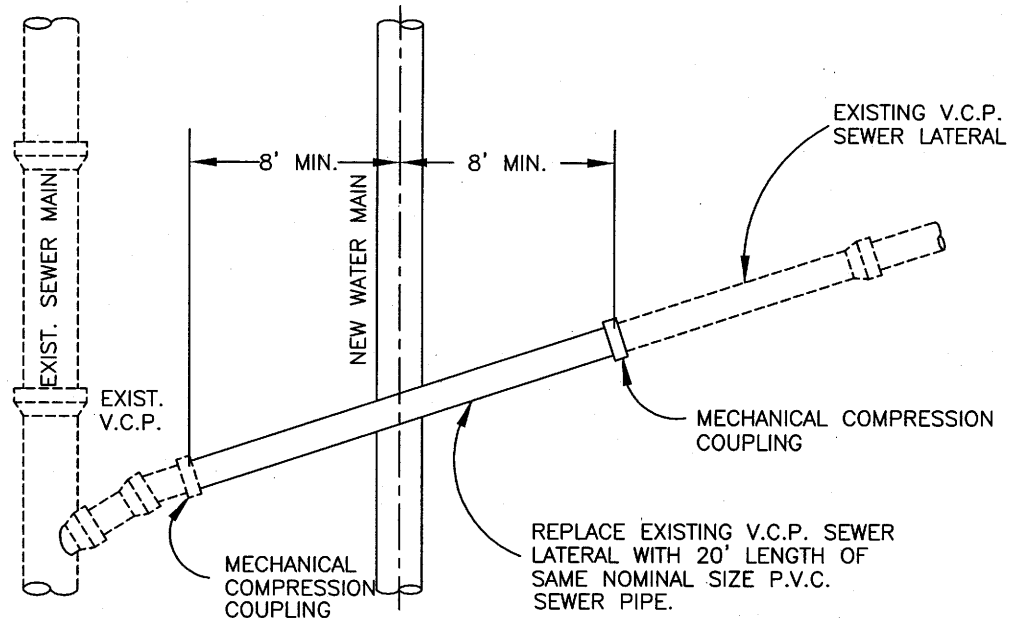
NOTES:

1. The Double Check Valve Assembly must be installed where it is accessible for periodic testing and maintenance.
2. PRIOR TO INSTALLING IN LINE, FLUSH SUPPLY LINE OF ALL FOREIGN MATERIAL. Failure to flush the lines completely may cause the checks to become fouled and require disassembly and cleaning.
3. The device shall only be installed per manufacturer's specifications.
4. When threading the device in line, place wrench only on ball valve hex ends. Keep pipe dope off interior surfaces of valve. On 2-1/2-inch and larger devices, DO NOT LIFT THE DEVICE WITH GATE VALVE HANDWHEELS OR STEMS. ALSO DO NOT SUPPORT DEVICE FROM ONLY ONE END.
5. After installation, fill device and bleed air from unit. Test to insure proper operation. If either check fails to hold 1.0 PSI, it is most likely due to fouling. The cap must be removed and the seat and/or seat disc cleaned.
6. The device must be protected from freezing. Thermal water expansion and/or water hammer downstream of the backflow preventer can cause excessive pressure increases. Excessive pressure situations should be eliminated to avoid possible damage to the system and device.
7. All fire lines will be required to have double check detector check.
8. Any backflow prevention assembly installed overhead (5' or more) must have a permanent platform built for accessibility.
9. Refer to Uniform Plumbing Code (UPC) chapter 6, sections 603.00 thru 603.4.20 for more information.

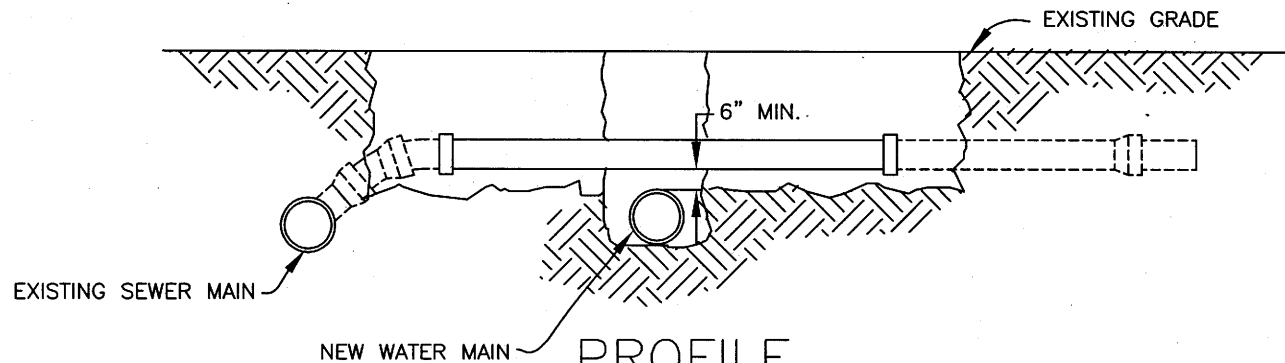
REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
			DOUBLE DETECTOR CHECK ASSEMBLY	6-015.1-06
		PUBLIC WORKS DIRECTOR	BACKFLOW PREVENTION ASSEMBLY - TYPE 2 - NOTES	
		DATE		

NOTES:

1. Any variation from that shown must be approved by the Engineer.
2. Sewer laterals shall maintain original slope.
3. PVC pipe shall be Class 200 P.V.C. pipe per AWWA C900.
4. Backfill shall be Class I as defined in Standard Detail 7-001.0 and shall be placed in accordance with ASTM D 2321.
5. Mechanical compression coupling shall be a band seal type repair with an outside stainless steel shear ring, "strong back" or approved equal by the Engineer.



PLAN



PROFILE

REVISED	DATE	APPROVED	CITY OF SANTA BARBARA - PUBLIC WORKS DEPARTMENT	STANDARD DETAIL
		<i>Anthony J. [Signature]</i>	MODIFICATION OF SEWER LATERAL OVER	6-016.0-06
		PUBLIC WORKS DIRECTOR	WATER MAIN	
		DATE		